

WHAT IS CLAIMED IS:

1 1. A system for distributing at least one of information and photonic energy into at
2 least one room of a building, comprising:
3 a lighting generator for generating visible light energy;
4 an infrared (IR) heat generator for generating IR heat energy; and
5 an optical fiber subsystem for transceiving at least one of the visible light energy and the
6 IR heat energy into the at least one room.

1 2. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, wherein the optical fiber subsystem transmits optical
3 information signals, radiates the optical information signals as optical wireless signals into the at
4 least one room, and receives optical wireless signals from the at least one room.

1 3. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, further comprising a data transfer subsystem for
3 transceiving external information to and from the system.

1 4. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, wherein the optical fiber subsystem carries the visible
3 light energy, the IR heat energy and optical information signals.

1 5. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 4, further comprising:

3 a local transmit and receive element for separating the visible light energy, the IR heat
4 energy and information signals;
5 a light lens/diffuser for diffusing or focusing the visible light energy into the at least one
6 room;
7 a heat diffuser for diffusing the IR heat energy into the at least one room; and
8 a room illuminator/receiver for transceiving the information signals to and from the at
9 least one room.

1 6. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 5, wherein the room illuminator/receiver comprises:
3 a combiner for combining the information signals of the optical fiber subsystem;
4 a transmit amplifier connected to the combiner, for amplifying the information signals to
5 be transmitted into the at least one room;
6 a receive amplifier connected to the combiner, for amplifying the information signals
7 received from the at least one room;
8 a circulator for directing the information signals from the transmit amplifier and to the
9 receiver amplifier; and
10 an optical holograph diffuser for propagating and receiving optical wireless information
11 signals into and from the at least one room.

1 7. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 5, wherein the room illuminator/receiver comprises a

- 3 micro-electro mechanical system (MEMS) mirror subsystem for transceiving optical wireless
4 information signals from multiple sources in the at least one room.

1 8. The system for distributing at least one of information and photonic energy into
2 at least one room of a building of Claim 1, wherein the lighting generator comprises:
3 a lamp enclosure connected to the optical fiber subsystem; and
4 at least one lamp for generating the visible light energy,
5 wherein the visible light energy is transferred to the optical fiber subsystem for
6 transmission throughout the system.

1 9. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 8, wherein the lamp enclosure further comprises an inner
3 surface of highly polished material.

1 10. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, wherein the IR heat generator comprises:
3 a lamp enclosure connected to the optical fiber subsystem; and
4 at least one infrared lamp for generating the IR heat energy,
5 wherein the IR heat energy is transferred to the optical fiber subsystem for transmission
6 throughout the system.

1 11. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, wherein the lighting generator and the IR heat generator
3 are combined into one unit.

1 12. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, further comprising a heat dissipation system comprising:
3 a shutter, constructed into a wall defining an inside space and an outside space, for
4 opening and closing to control the flow of heat through the shutter from the inside space to the
5 outside space;
6 a heat sink located adjacent to the wall in the outside space and adjacent to the shutter, for
7 transferring heat from a first location adjacent to the shutter to a second location; and
8 a heat dissipater for dissipating heat from the second location.

1 13. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 12, wherein the heat dissipater of the heat dissipation
3 system is one of a radiator and a condenser.

1 14. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, further comprising a user attachment connectable to a
3 user device, for converting the optical wireless signals into electrical signals compatible with the
4 user device.

15. The system for distributing at least one of information and photonic energy into at least one room of a building of Claim 14, wherein the user attachment comprises:

an optical holographic diffuser for receiving the optical wireless signals and transmitting the optical wireless signals into a optical fiber;

a receiver amplifier for amplifying the optical fiber signals; and

a connector operably connected to the receiver amplifier for connecting to the user device.

1 16. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 15, wherein the user attachment further comprises a micro-
3 electro mechanical system (MEMS) mirror for directing the optical wireless signal.

1 17. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 15, wherein the user attachment further comprises a
3 transmitter amplifier for amplifying optical fiber signals from the user device for propagation
4 through the optical holographic diffuser into optical wireless signals.

1 18. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 17, wherein the user attachment further comprises a micro-
3 electro mechanical system (MEMS) mirror for directing the optical wireless signal.

1 19. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 15, wherein the user attachment further comprises a
3 converter to convert optical fiber signals to and from signals compatible with the user device.

1 20. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, wherein the lighting generator is comprised of at least
3 two light sources each having a different color.

1 21. The system for distributing at least one of information and photonic energy into at
2 least one room of a building of Claim 1, wherein quality of service (QoS) classes for transceiving
3 the information signals are comprised of a single user mode and a multi user mode.